Appendix 2-1
NOAA Strategic Management Process

The NOAA Program Review Team recommended the enhancement of a more corporate NOAA with the infusion of a shared system of principles, processes and support structures. The proposed NOAA Strategic Management Process and supporting systems will enable NOAA to more effectively and efficiently achieve its missions by leveraging intra-agency synergies and increasing total efficiencies by standardizing business processes throughout the agency. Most importantly, the proposed Strategic Management process will serve as the foundation for a pragmatic yet flexible corporate deliberation and decision process.

Employee comments reflected a myriad of issues related to instances of "non-corporate" behavior and its consequences. Some of the most frequently mentioned issues included: ineffective corporate planning; a need for greater prioritizing, evaluation and accountability; in-house fighting for resources; lack of flexibility in shifting resources; ineffective intra-agency coordination and integration of overlapping programs; inadequate tapping of synergies across line offices; duplication of efforts; and inadequate sharing of information.

NOAA Strategic Management Process Features

The PRT recommended that NOAA institute the strategic management process. The PRT recommended an improved business process for corporate decision-making utilizing the NOAA Executive Council, NOAA Executive Panel, and other standing and new committees. These committees will follow standard operating procedures and be linked to the overall strategic management process.

Under the proposed process, forums for decision making exist for major corporate systems and processes. NOAA's Executive Council serves as the "hub" for ultimate decision making, supported by the NOAA Executive Panel and appropriate sub-committees. The NOAA Executive Panel serves as an integration committee responsible for total program and system alignment and cross sub-committee issue resolution.

The proposed process would help to maximize the output of the collective NOAA in mission execution. Furthermore, the standardization of processes should reduce the extensive duplication of efforts across line offices. Additionally, the agency will have the ability to achieve a NOAA corporate identity with vetted priorities and plans, an aligned resource allocation process, and accountability for results.

Appendix 2-2
Notional Program, Planning, and Budgeting Process

The PRT deliberated on a process to initiate the recommendation to separate the program planning from the budget cycle. Figure 2-2.1 represents the proposed process for implementing the abbreviated program planning process for the FY 05 budget cycle (i.e., starts in September), while Figure 2-2.2 represents the proposed process that would occur during typical planning and budgeting years (i.e., starts in April). Figure 2-2.1 anticipates that there will be input from the developing Strategic Plan in the FY05/06 process, while Figure 2-2.2 reflects the process once a new Strategic Plan is in place. In both cycles, the NOAA Executive Council would issue guidance on the Fiscal Year 05/06 themes and request Line Offices to nominate Theme Teams and develop Tactical Plans which would include a description of the scope of the program and performance measures. These draft plans would undergo a program analysis and evaluation prior to review by both the NOAA Executive Panel and the NOAA Executive Council. From among the Plans submitted, the NEC will select Plans that should be further developed. The formal planning process transitions into a budgeting process in March when the selected plans are submitted in the annual budget cycle for inclusion in the President's Budget in the following February.

Figure 2-2.1: Notional Planning, Programming (FY05 & 06) and Budgeting (FY05)

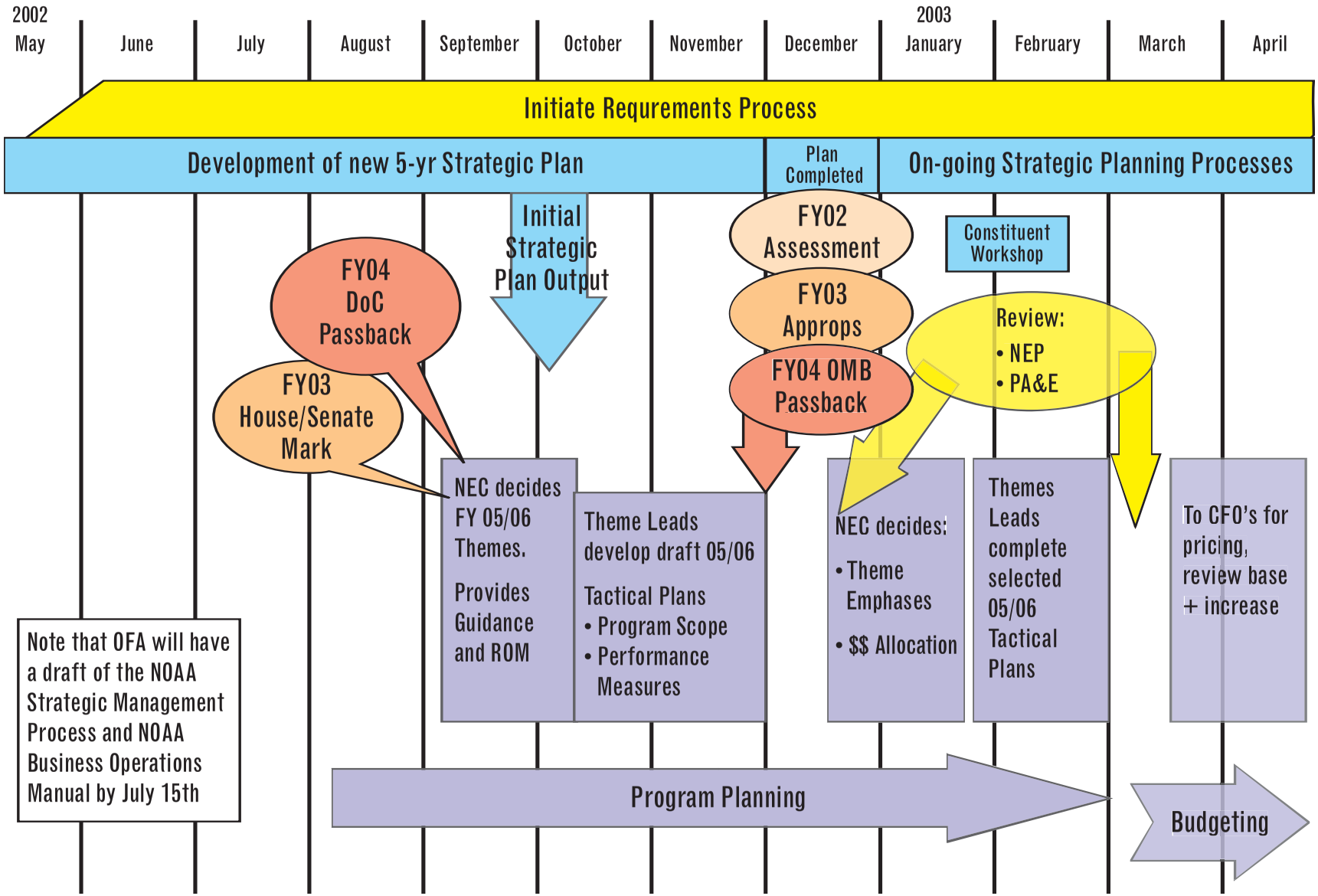
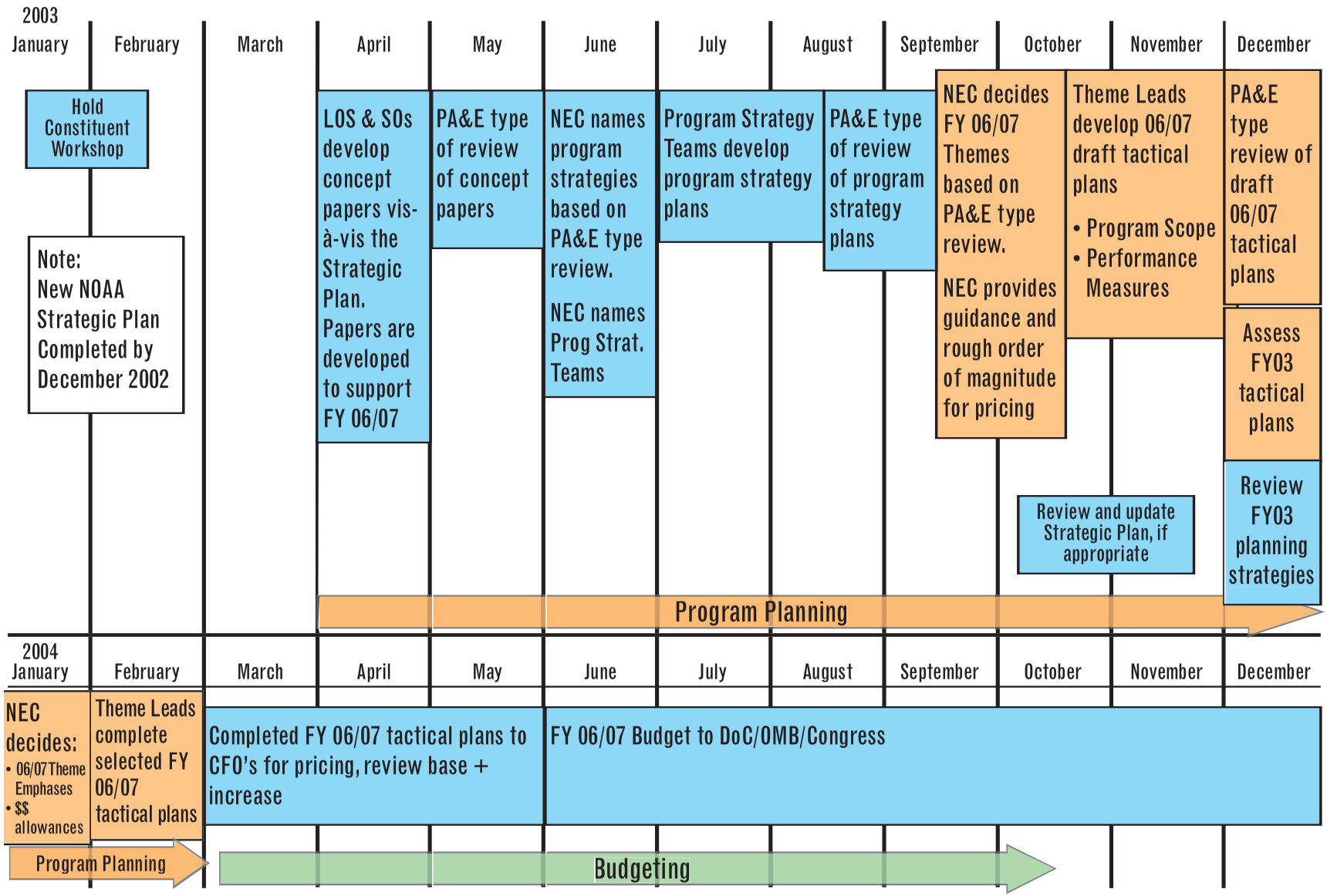
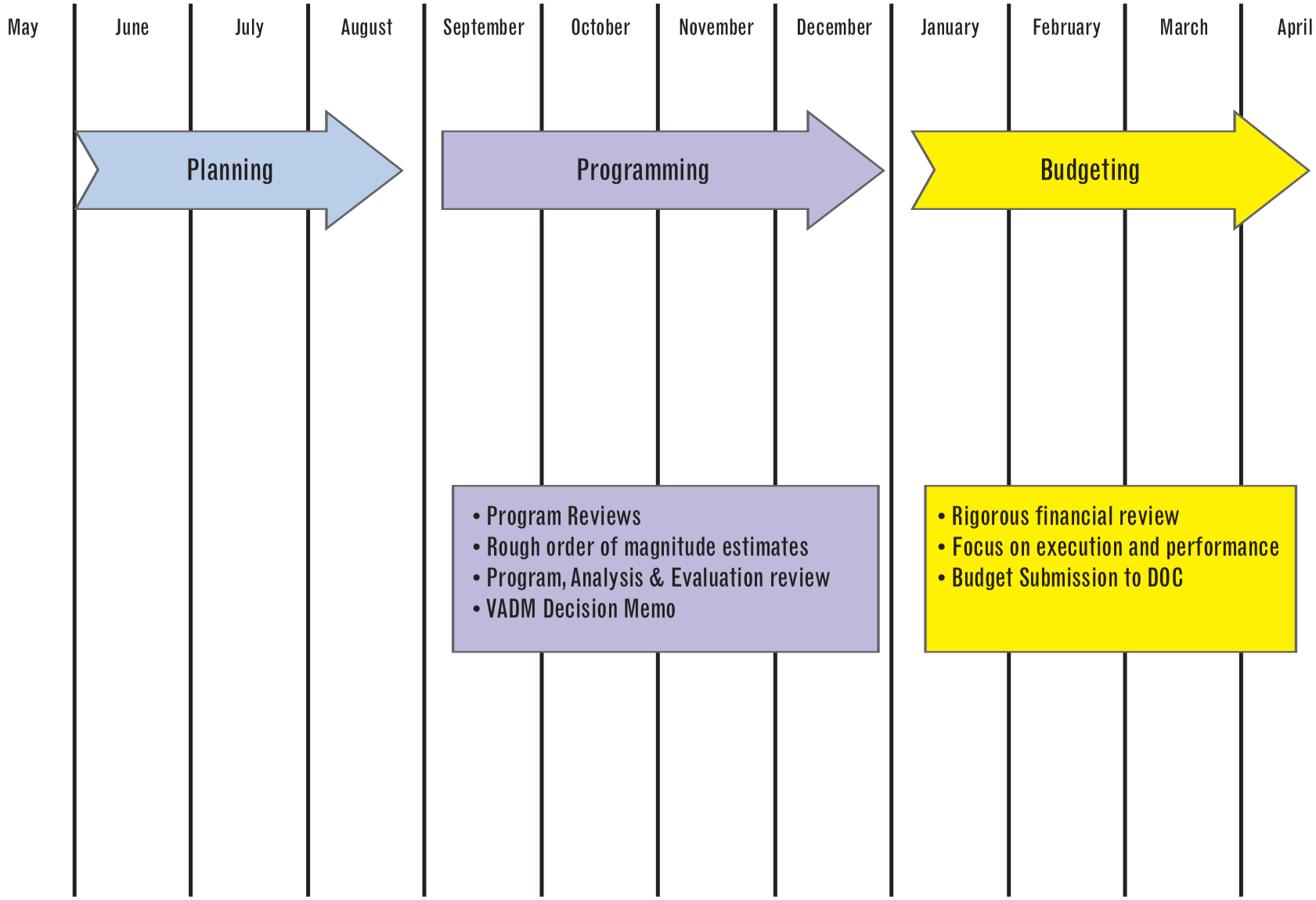


Figure 2-2.1: Notional Planning, Programming (FY05 & 06) and Budgeting (FY05)



Attachment 1, Appendix 2-2: Simplified Timeline for Planning, Programming, and Budgeting



Appendix 2-3
NOAA Executive Council and NOAA Executive Panel

NOAA Executive Council

Membership:

- Under Secretary/NOAA Administrator (Chair)
- Assistant Secretary
- Deputy Under Secretary (serves on both NEC and NEP)
- Assistant Administrators
    - —National Environmental Satellite, Data, and Information Service
    - —National Marine Fisheries Service
    - —National Ocean Service
    - —NOAA Research
    - —National Weather Service
    - —Program Planning and Integration
- Director, Office of Marine and Aviation Operations
- NOAA Chief Financial Officer/Chief Administrative Officer
- Deputy Assistant Secretary for Oceans and Atmosphere
- Deputy Assistant Secretary for International Affairs
- Chief of Staff
- Director, Office of Public and Constituent Affairs
- Director, Office of Legislative Affairs

Roles:

- Establishes new policy and procedures
- Sets organizational direction
- Conducts organizational assessments
- Resolves conflicts within Line Offices/Programs

NOAA matrixed managed programs (e.g., climate, research, corals, ocean exploration, etc.) should report to the NOAA Executive Council (NEC) thru the DAS for Oceans and Atmosphere. Also, international activities should report to the NEC through the DAS for International Affairs.

NOAA Executive Panel

Membership:

- Deputy Under Secretary (Chair. Also sits on the NEC)
- Deputy Assistant Administrators
    - —National Environmental Satellite, Data, and Information Service

—National Marine Fisheries Service
—National Ocean Service
—NOAA Research
—National Weather Service
- Deputy Director, Office of Marine and Aviation Operations
- Deputy Chief Financial Officer
- Deputy Chief Administrative Officer
- NOAA Chief Information Officer
- Representative of the Office of Program Planning and Integration

Roles:
- Manages Programs within established baselines
- Recommends new/changed policy and programs

Executive support staff would be identified to serve *both* the NEP and the NEC. Support staff would also be responsible for developing formal agendas, briefing documents and conducting the necessary research to support decision-making. Support staff would coordinate the dissemination of decision memoranda and follow up activities.

The NEP is supported by a set of standing and *ad hoc* committees (or councils). These committees need to be systematically reviewed to ensure they are operating with an established charter and with procedures that ensure they are conducting the proper planning, assessment, and reporting activities. The following standing committees will report to the NEP. Additional committees may be established as the need arises.

Name	**Area**	**Charter**	**Planning/ Assessment/ Reporting**	**Comments**
Chief Information Officer (CIO) Council	Information Technology	Yes	Yes. Reporting needs to be improved.	
NOAA Information Technology Review Board	Information Technology	Yes	Yes. Reporting needs to be improved.	
Platform Allocation Councils	Ship and Aircraft Time	Yes. NAO	Yes	PRT recommendation to improve NOAA Strategic Management Processes
Facilities Council	Facilities	No	No	Currently inactive. Reactivation pursuant to PRT recommendation under NOAA Facilities

Name	Area	Charter	Planning/ Assessment/ Reporting	Comments
Chief Financial Officer/Chief Administrative Officer (CFO/CAO) Council	Umbrella committee for budget and finance, and human resources	No.	To be established	
CFO Subcommittee * CAMS Board * Finance Council	Budget and Finance	No	To be established	
CAO Subcommittee	Human Resources and other Administrative activities	No	To be established	
Corporate Services Subcommittee	Committees to set service levels, corporate costs, working capital fund, customer service board	No	To be established	
Grants Council	Grants	No	No	Reconstitute NOAA Grants Council pursuant to PRT recommendation.
Diversity	Managing Diversity	Yes	Yes	
EEO	EEO	Yes	Yes	
Training Council	Corporate Training	Ad Hoc	No	Should be permanently established

Name	Area	Charter	Planning/ Assessment/ Reporting	Comments
Minority Serving Institutions	Minority Serving Institution	Yes	Yes	
NOAA Personnel Demonstration Project Board	Personnel	Yes	Yes	
NOAA Education Committee	Education	TBD using CIO model	Yes, but ad hoc. To be improved with new Charter.	To be established pursuant to PRT Recommendation in Education and Outreach

Appendix 2-4
NOAA Chief Information Officer Model

NOAA has established and implemented a Chief Information Officer (CIO) structure that includes both a NOAA-level Office of the CIO and CIOs in each line office (LO) along the lines required by the Clinger-Cohen Act (Information Technology Management Reform Act), 41 U.S.C. § 1401, *et seq.* This structure is designed to provide both local management of LO—specific Information Technology (IT) issues and for joint action to address cross-cutting issues that affect NOAA as a whole. The CIOs use the organizational structure and processes described below:

- NOAA CIO Council—Meeting once a month, the Council is the decision making, advisory, information sharing, and coordinating group at the center of NOAA's IT management process. On matters of NOAA IT policy, the Council is advisory to the CIO. On matters requiring that LOs expend funds, the council seeks consensus and coordination. In the event an LO chooses not to participate, the remaining LOs proceed together, but without the non-participants. In any event, all actions in the CIO community must conform to the IT architecture of NOAA and the Department.

- NOAA IT Review Board (NITRB)—The NITRB, consisting of the CIOs plus a representative of the Chief Financial Officer (CFO), is the group that implements NOAA's IT capital planning and investment review process. It is responsible for advising NOAA management on the selection of proposed new IT investments, the control of IT projects under development, and the evaluation of existing operational IT systems. Typically the NITRB reviews initiatives and large projects (>$2.5M) with smaller projects handled internally within the LOs. The NITRB evaluates programs for alignment of projects with mission; alternatives and risk analyses; and a clear description of costs, schedule, and performance. This process aligns well with OMB Exhibit 300.

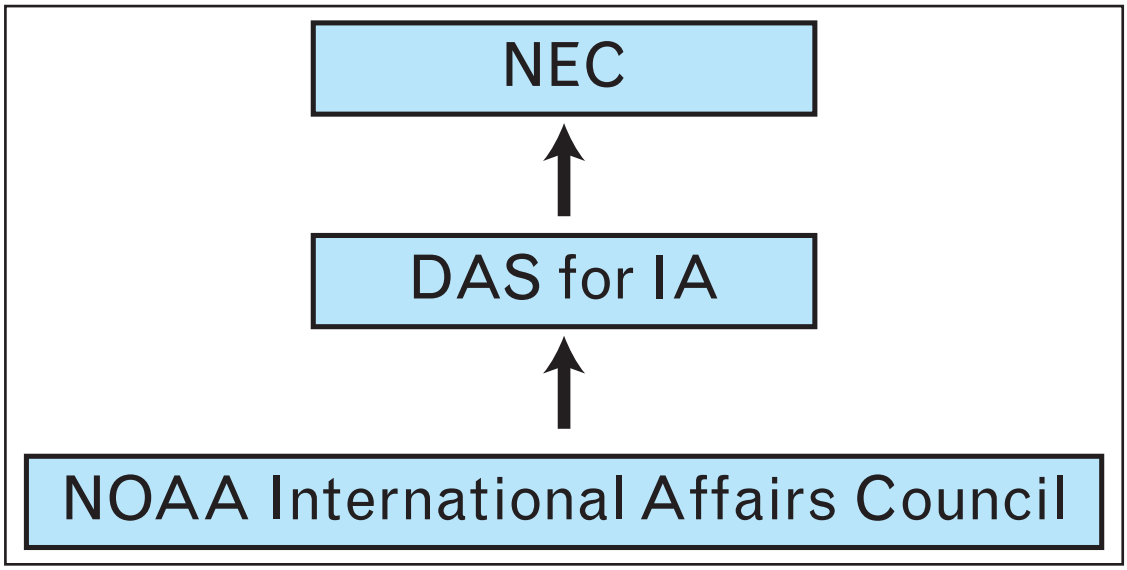
- Working Groups—Specific issues are addressed using both permanent and special purpose working groups. These groups typically are led by a subject—matter expert, have representatives from each LO, and take direction from the CIO Council. Examples of permanent groups are the IT Security Officers, the Section 508 Group, Network Advisory Technical Team, and the Messaging Configuration Board. Temporary groups are established as needed to deal with issues such as drafting a new policy (i.e. office automation, remote access, etc.) or addressing a specific technical issue (i.e. calendaring, active directory, etc.). The CIO Council regularly reviews the progress of the groups, addressing performance measurement and setting project goals.

- Budget Formulation—The CIO Council identifies enterprise-wide requirements that need to be addressed through budget initiatives. Special working groups are created to plan and document these requests. The FY 03 IT Security initiative is an example of taking an enterprise approach to solving a collective problem.

- Architecture—An Enterprise IT Architecture has been developed as a long term vision of what NOAA's IT community is collectively working towards. With both LO and six overarching enterprise wide portions it provides both the starting point and the eventual target for our efforts. The architecture process documents our principles of operation and baseline, establishes a future target, identifies gaps, formulates a migration plan and implementation plan, and finally is a living process which is updated routinely.

- Process Maturity—Establishing performance measures is a key IT management tool. Capability Maturity Models (CMM) have been established to gauge the level of maturity of processes used in IT management. Typically, five levels of performance are defined. Levels 1 and 2 are *ad hoc* and immature, level 3 is typical of good, solid practice, and levels 4 and 5 are most useful in areas of high ambiguity, complexity, or change. Models exist for software development, security, planning, and architecture.

Attachment 1, Appendix 2-4
Managing NOAA's International Affairs
(An example of applying the CIO model)



- Chaired by Office of International Affairs
- Members—LOs, GC, others as appropriate
- Meet monthly
- Advise NOAA Management for Decisions
- Coordinate Activities
- Share Information
- Recommend NOAA international policy, objectives and priorities (parallel to CIO Architecture panel)
- Semi-annually, Council will meet to discuss budget, priorities, staff issues (parallel to CIO Review Board)
- Working Groups/Teams
  - —made up of LOs, IA, GC, others
  - —organized by theme or topic

Appendix 2-5
Resource Allocation Cycle Times

1. **Initial Target Allowance** = Base level spending. Typically 80% of resources.
   [Example: 2002 target = $2.8B of $3.3B]

   Performance Measure = First Week October
   2001 = allowed 10/06/00
   2002 = allowed 10/01/01

2. **Time Critical Carryover** = A new category created to deal with emergent projects.
   [Example: 2002 Time Critical = $279M]

   Performance Measure = Month of October.
   2001 = Allowed 10/27/00
   2002 = Allowed 10/19/01

3. **Final Carryover** = Based on financial closeout and reconciliations between budget and finance.
   [Example: 2002 Final Carryover = $87.5M]

   Performance Measure = Immediately following closeout.
   2001 = Allowed 01/30/01
   2002 = Allowed 11/30/01

4. **Program Increases** = Changes based on appropriations actions; also included management decisions on de-obligations
   [Example: 2002 Program Increases = $528M]

   Performance Measure = 15 working days following appropriation.
   Bill signed 11/28/01; distributed 17 working days later.
   2001= Allowed 03/22/01*
   2002= Allowed 12/21/01

Line Office Allocations

- No known performance data.
- During grants review, suggested turnaround times for Line Office budget distribution.

* management decision to hold allowance for corporate cost decisions and de—obligations.

Appendix 2-6
Matrix Program Management Directive Example

TEMPLATE

Date:

Title of the Matrix Managed Program

I. Executive Summary: Four-sentence paragraph describing the proposed activity.

II. Program Information: For each Participant, provide contact information and history of previous supporting documents.

III. Program Management Direction: Whether this Program Management Directive is discretionary or mandatory. Directs immediate notification of any inability to execute the program as directed with reasons and documentation.

A. Changes due to Externally Driven Activities:

B. Agency/Organization Responsibilities:

IV. FUNDING: Documents funding arrangements.

Signature Block of Authorized Officials

For Participant A	**For Participant B**
NAME Title	NAME Title
Line Office or Agency A	**Line Office or Agency B**

Attachments

1. References2
2. Mandatory Distribution List2
3. Additional Distribution List2

Appendix 2-7
NMFS and NOS Roles in Habitat Conservation and Restoration

The PRT identified improved coordination of the habitat conservation and restoration activities found in the National Marine Fisheries Service (NMFS) and the National Ocean Service (NOS) as an opportunity for applying matrix management.

In NOAA, "habitat" does not refer to a program. The physical, biological, and social sciences employed to understand coastal and ocean habitats, and the applications used to assess and predict their change are components of multiple programs in NOAA. Most NOAA programs related to habitat are in NMFS and NOS. Specific roles for each line office in the areas of habitat conservation and restoration are outlined below:

Roles of National Marine Fisheries Service (NMFS):

Through its Office of Habitat Conservation, NMFS focuses its efforts on national and regional habitat issues related primarily to *living marine resources.* NMFS relies on a network of headquarters and field programs to fulfill dozens of agency mandates related to coastal habitat issues. Primary mandates focus on ensuring that living marine resources have sufficient healthy habitat to sustain populations. Those mandates emphasize wetlands, anadromous fish habitat, and habitat of harvested fish species, and invariably include close partnerships with state and federal agencies, industry, environmental groups, and academia.

> The NMFS Habitat Protection Division is responsible for ensuring scientifically sound responses to state and federal actions taken that may affect fisheries trust resources in wetlands and waterways. For example, the Division provides habitat expertise related to fisheries impacts associated with the Endangered Species Act, the Federal Power Act, and essential fish habitat mandates of the Magnuson-Stevens Fisheries Conservation and Management Act.
>
> The NMFS Habitat Restoration Center is NOAA's on-the-ground focal point for habitat restoration in support of NOAA trust resources. The Center identifies and prioritizes potential restoration projects, implements projects and develops advanced restoration technologies, and catalyzes various federal, state and local restoration efforts directed at living marine resources. The Center implements Community-Based Restoration, the Coastal Wetlands Planning, Protection, and Restoration Act, and the national Damage Assessment and Restoration Program (DARP) (See discussion under NOS Roles).

Roles of NOAA Ocean Service (NOS)

Through its Office of Response and Restoration (ORR), NOS protects and restores NOAA trust resources through application of science and technology to prevent, plan for, and respond to oil spills, releases of hazardous substances, and hazardous waste and to restore affected resources sites in coastal environments. ORR uses headquarters support, field expertise, and local partnerships to assist communities and decision makers in improving coastal health.

The Coastal Protection and Restoration Division (CRPD) applies science to ensure best remedial actions are taken to restore coastal habitats affected by hazardous materials releases. CRPD works closely with the EPA, other lead response agencies, and responsible parties to protect NOAA trust resources through the CERCLA ("Superfund") remedial process.

The Damage Assessment Center (DAC) is responsible for natural resource damage assessment of releases of oil and hazardous substances. DAC assesses impacts to coastal and marine resources, recovers resources from polluters, and works closely with NMFS Habitat Restoration Center and the Office of General Counsel, Natural Resources as part of the DARP within NOAA.

The Damage Assessment and Restoration Program

NMFS and NOS both participate in the DARP, established by NOAA in 1990 to fulfill natural resource trustee responsibilities assigned in the Clean Water Act, CERCLA, the Oil Pollution Act of 1990, the National Marine Sanctuaries Act, and other federal laws. Staff in the NMFS Habitat Restoration Center, the NOS Damage Assessment Center, and the NOAA Office of General Counsel work as a multi—disciplinary team to evaluate toxic releases, assess and quantify injuries, recover damages through negotiation or litigation, develop and evaluate restoration alternatives, and implement successful restoration strategies.

Appendix 2-8
Proposed NOAA Requirements-Based Management Process

The NOAA Program Review Team (PRT) identified the need to develop a requirements-based management process and tasked a subgroup of the PRT Staff to undertake this effort. During the Review, many NOAA employees, including the Administrator, suggested that NOAA does not have a consistent, agency-wide requirements-based process for all programs. This same need was identified in the 2000 National Academy of Public Administration (NAPA) report entitled, "Improving the NOAA Budget and Financial Management Processes."

The traditional requirements process is conducted in preparation of a major system acquisition to study and analyze mission area, mission needs, and various solutions to meet mission needs, and to develop specific performance requirements. In the case of a requirements-based management system, the requirements process can be based on the traditional acquisition model, however it must be modified so that it can be used to study and analyze programs.

NOAA currently has a requirements process that is defined in:

—Department of Commerce, Department Administrative Order (DAO) 208-3, "Major System Acquisitions for the Department of Commerce," (effective 12/9/97; amended 9/18/86);
—NOAA Administrative Order (NAO) 208-3, "Major System Acquisitions," (effective 9/21/94; amended 9/27/96); and
—OMB Circular A-109, "Major System Acquisitions" (4/5/76).

However, the DAO and NAO typically apply to acquisitions greater than $100M, unless otherwise designated by the Deputy Under Secretary. In addition, the DAO and NAO are out of date, very general, and difficult to apply to the analysis of science or research programs because they are specifically written for acquisitions.

In many cases, line offices use some type of requirements process for major acquisitions. For example, in AWIPS, NEXRAD, and ASOS the NAO 208-3 process was used. The NPOESS Program used the highly structured DoD Instruction 5000.2 Requirements Process as the basis for the major systems acquisition. In the case of NOAA vessel procurements such as the *Ronald H. Brown,* a combination of the Navy's internal requirements process in addition to NAO 208-3 was used. Although successful, these same requirements processes cannot be applied easily to the analysis of science or research programs without modification, nor are they necessarily suitable for smaller programs.

The PRT was tasked with drafting a requirements-based management process for the Administrator's consideration that can be implemented for large and small system acquisitions, operations, services, and science or research programs. The desired objective was to develop a process similar to NAO 208-3 which will establish defined requirements to meet NOAA's mission and result in clear justifications for programs. The

desired outcome of the process is to increase support of NOAA's core missions, incorporate cross-cutting, and improve NOAA's responsiveness to partners and customers. In order to be successful, the process should be consistently implemented across the agency and programs should be held accountable for compliance.

The proposed requirements-based management process is designed to ensure that intra-agency mission needs are met by establishing appropriate cross-cutting program requirements, assessing mission capabilities, analyzing alternatives to meet those requirements, and conducting continuous mission analysis to monitor, measure and evaluate the execution of mission requirements. The process is broad-based and end-to-end, and it coordinates major processes: 1) Requirements, 2) Program, Planning and Budgeting, and 3) Acquisition Management.

The main features of the requirements-based management process are:

- Accountability through the evaluation of performance measures for submissions2
- Comprehensive solicitation of needs from all sources2
- Validation of requirements with regard to meeting mission needs and strategic plan2

Implementation of a requirements based management process within the individual Line Offices and Staff Offices

It is intended that the requirement-based management process will be developed with clearly established connections to the revised planning, programming, and budgeting processes. The requirements process, as proposed and with the background documentation attached in Attachments 1 and 2, provides a starting point for a follow-on implementation.

Figure 1 in Attachment 1 to this Appendix provides an overview of the proposed NOAA requirements based management process. It follows a requirement from the initiation of a need, through validation, analysis, and final approval. Attachment 1 provides a detailed description of the proposed process. In addition, a presentation on the proposed process was provided to the PRT on April 18, 2002, and the slides from that presentation are included as Attachment 2.

There are many positive features of this requirements-based management process. It will maximize business efficiencies, encourage more corporate behavior, create a more level playing field for competition for limited resources, and provide more expenditure accountability. One consistent theme throughout the Program Review and also in the NAPA report, was that NOAA needs to be more corporate in its thinking. The proposed process contains built-in mechanisms for ensuring intra-agency interaction and evaluation of programs and systems relative to the entire agency's mission and capabilities. Also inherent to the proposed requirements-based management process is the evaluation of possible alternative solutions within and outside of the agency that may lead to further efficiencies.

Implementation of this process should result in a formalized and standardized management process applied to all line and staff offices that will provide consistent procedures and direction for NOAA employees. It is believed that this effort will be responsive to the concern expressed by some members of the public, partners, and agency employees that NOAA lacks rigor for justifying programs, acquisitions, and systems. Additionally, once the process has been established and the requirements database is maintained, information for Congressional inquires should be easier to obtain and NOAA's responses will provide more consistent information.

A major drawback to implementing this requirements-based management process is culture change and the growing pains it will cause. One way to ease this pain is to implement pilot projects within the line offices and provide for a gradual incorporation by applying this process to the FY05 budget formulation. Staff will require training and familiarization on this process. This training may include courses in project management, analysis, and budgeting.

Attachment 1, Appendix 2-8
Proposed Requirements-Based Management Process

Background

To develop a requirements-based management process that is applicable to NOAA and its diverse programs and needs, a survey of existing practices in other agencies was undertaken and the "best practices" were gleaned, assessed and, where appropriate, incorporated into the proposed NOAA process.

Requirements processes from the following agencies were evaluated:

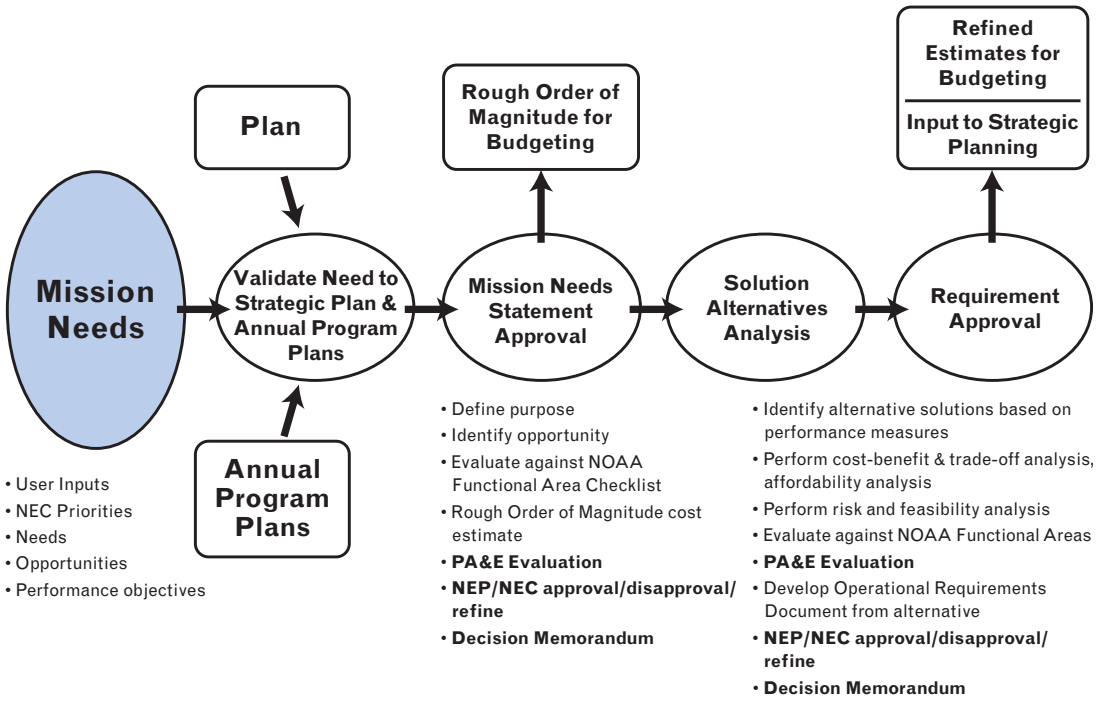
1. Department of Defense and various services2
2. Office of Naval Research2
3. Federal Aviation Administration2
4. U.S. Coast Guard2
5. National Aeronautics and Space Administration2
6. Department of Justice2
7. Office of Management and Budget2
8. National Reconnaissance Office (unclassified version)2

An analysis of these documents revealed that they were all based on Office of Management and Budget Circular A-109 (OMB A-109), Major Systems Acquisitions, but that each had been customized to suit for individual agency practices. Given NOAA's diverse mission as a service-oriented agency, development of a requirements-based management process was undertaken with the intent to address both program development and system acquisition.

Philosophy of the Process

The proposed requirements-based management process contemplates that similar decision-making processes will occur at NOAA Headquarters and line office levels and that these decision-making processes will be supported by a requirements generation and validation process. The requirements generation and validation process will provide the foundation for planning, programming and budgeting, and for the development of results-based performance measures that support the program as well as related systems acquisition management and operations. (See, Strategic Management Process discussion in Chapter 2 of this Report). The expected outcome will be a standard process to aid decision-making by the NOAA Executive Council (NEC) with program development and systems acquisition.

Figure 1: Proposed NOAA Requirements Based Process



The intent of the requirements-based process is to initiate longer term, up-front program planning and development well in advance of the spring budgeting cycle. It is designed to minimize any unnecessary procedures that would hinder program planning and implementation. In fact, as designed, the planning and programming processes will facilitate faster cycle times for budgeting and program implementation. It also builds in traceability of the requirement to ensure the validity of the proposed solution; as well as accountability that programs are being designed so that they adequately address all aspects of implementing and operating the program or system.

12-Point NOAA Functional Areas

NOAA's planning and programming process should address all the activities that are required to ensure success of a program or acquisition. Often, a system is acquired without prior planning regarding how the information it gathers will be transferred to or used by the user or customer it is designed to serve. In other instances, facilities, maintenance, employee training, legislative plans and outreach plans are not adequately thought through until the very end, and they often are funded inadequately. To correct this, the requirements-based management process proposes that Program Managers address the elements of the 12-Point NOAA Functional Areas at the earliest point. Additional details are contained in Table 1.

The twelve functional areas are:

1.0 Operations and services2
2.0 Training (Employee/Operator)2
3.0 Maintenance, Logistics, and Facilities2
4.0 Strategic Planning2
5.0 Safety Planning2
6.0 Information Technology and Management2

7.0 Financial Management2
8.0 Science and Technology2
9.0 Staffing and Organization2
10.0 External Affairs/Outreach/Education2
11.0 Internal/External Partners2
12.0 Users and Customers2

Criteria for Determining Whether Line Office Review or NOAA Review Occurs

The proposed process recognizes that a significant amount of program planning and implementation occurs within the line offices. The intent of the proposed process is to strengthen the decision-making process with the least amount of bureaucracy.

Existing and new programs *under $10 million* would continue to be planned, programmed, and executed under the purview of the Assistant Administrators (AA) within the line offices.

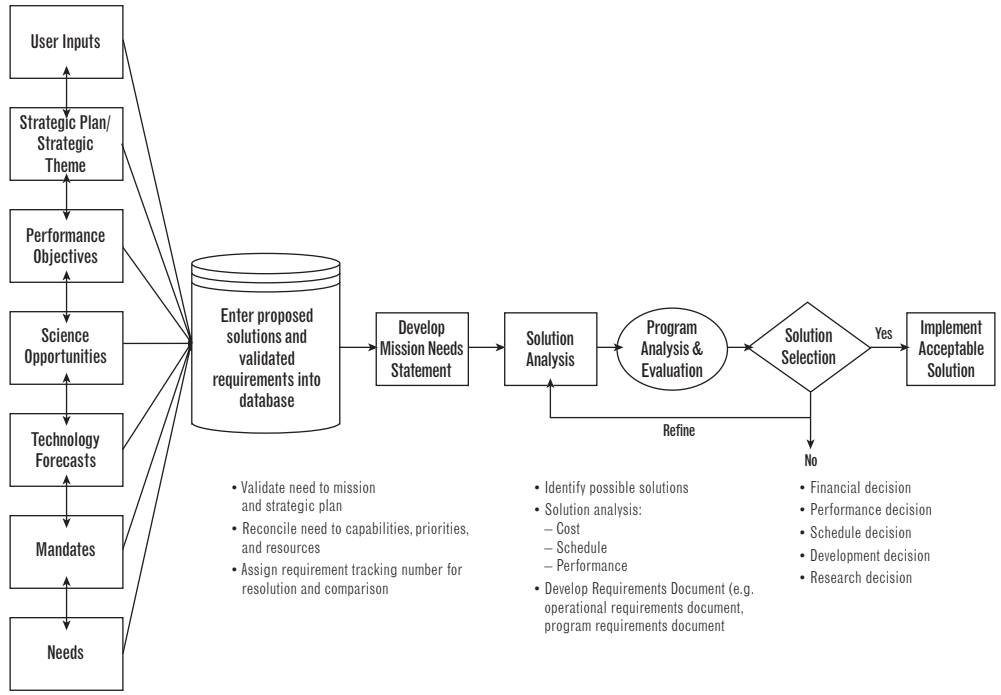
Systems, programs, and initiatives *over $10 million,* as well as complex or matrix-managed programs would be elevated to the NOAA level for review. On a case-by-case basis, the NOAA Executive Council (NEC) may decide that activities that are under $10 million but are highly visible or politically sensitive may require review at the NOAA level.

Line Office Requirements-Based Processes

Line office program managers would be the sponsors of projects, programs, and initiatives at the line office level. The decision regarding how that process will occur in a particular line office would be determined by the individual AA. Figure 2 depicts the proposed process whereby the line office would develop the mission needs statement (MNS) and internally determine if the proposed activity should move to the development of the solution analysis and beyond, or not. This step is represented by the decision points "Yes," "No," or "Refine" and re-submit in Figure 2.

The AA would determine the appropriate point for program analysis and evaluation review and then initiate the request for the Program Analysis and Evaluation (PA&E) office to review the proposed solution alternatives and supporting analyses. PA&E would provide the line office with recommendations for the AA or program manager to consider in making the determination, based on cost, schedule, performance, and adequacy, whether the solution should be implemented or elevated to the NOAA level. While there is no requirement for the line offices to develop their programs or initiatives using the 12-Point NOAA Functional Areas in Table 1, the PA&E will be using these areas as a template during its analysis and evaluation. Similarly, line offices may want to ensure that projects or initiatives that may require NOAA-level review are prepared using the 12-point criteria.

Figure 2: Line Office/Staff Office Requirements Process



Elements of the Requirements-Based Management Process

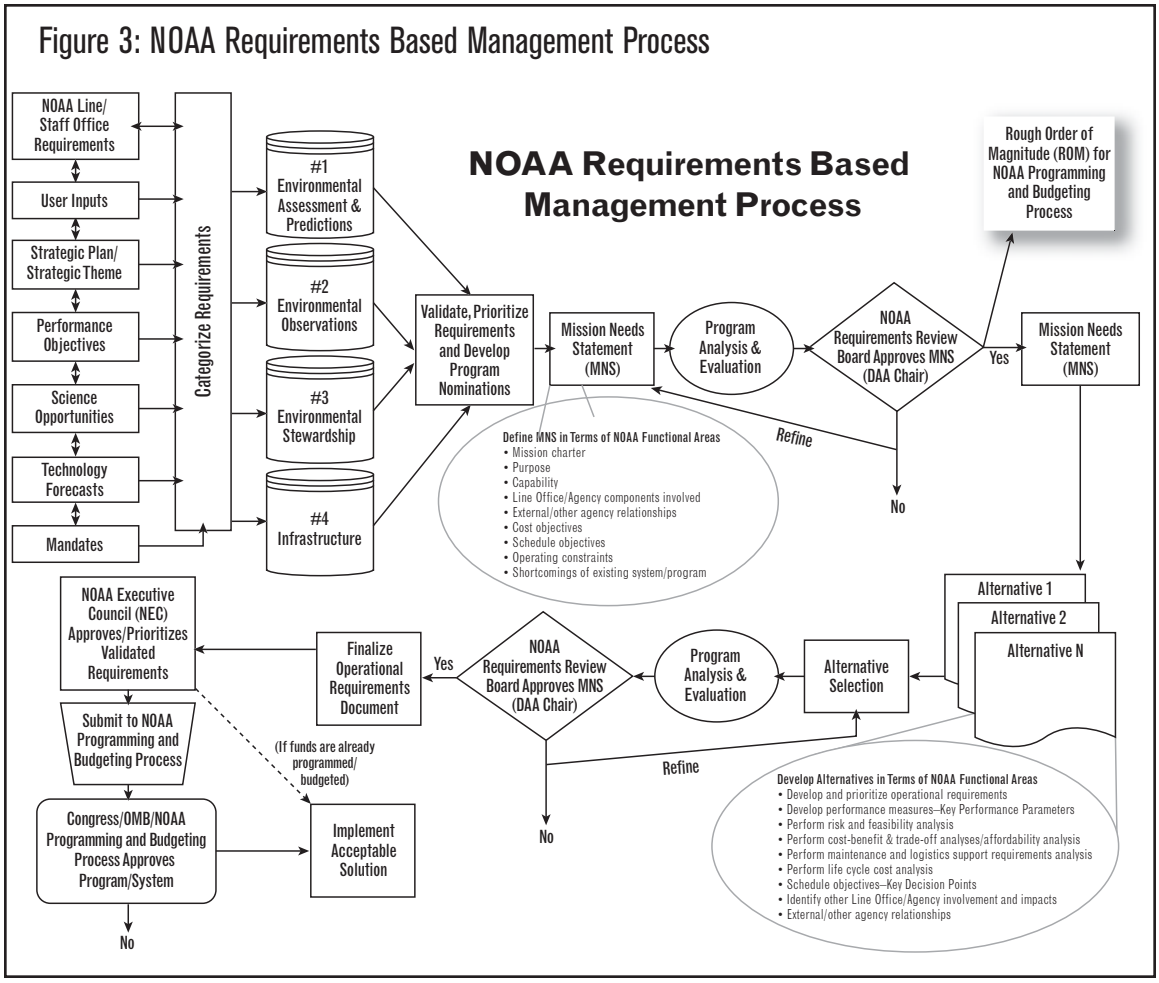
1. Requirements generation process

The requirements process is envisioned as constantly on-going and fully supportive of strategic and long term planning to implement NOAA's programs (Figure 3). Input will come from a number of sources:

i. NEC priorities
ii. User needs (Federal, State, local, or international)
iii. Science and technology advances and opportunities
iv. Performance objectives (improved)
v. Congressional directives
vi. Litigation
vii. Presidential priorities

Currently, with the exception of major acquisitions, NOAA does not have a process to assess the validity of various needs to determine whether a requirement is:

a) an actual requirement from a critical user or partner;2
b) NOAA's mandate to address, or the mandate of some other agency or the private sector;2
c) consonant with NOAA's core and future mission;2
d) an area that NOAA should make a priority to address2



2. Requirements Validation and Mission Analysis

The process of validating a requirement inevitably requires dialogue with the user or customer to understand how the information, product, or service will be used so that the proposed solution can be quickly incorporated into their operations or systems. The current process of validating requirements is not consistent and occurs in varying degrees across the agency.

The first step in the validation process will be to categorize and assign the requirement to one of 4 Keystone Requirements Databases (KRD):

1. Environmental Assessment and Predictions
2. Environmental Observations
3. Environmental Stewardship
4. Infrastructure

NOAA's current and future missions are the foundation of NOAA's programs, products, and services. Ensuring that requirements and the resulting programs or acquisitions are developed to support these 4 KRD's will ensure that the foundation is maintained.

Validation of the requirements will occur in a systematic process that involves all line office and staff offices to ensure that the response chosen to address the requirements uses resources across the entire

agency. It is envisioned that requirements will be keyed and tracked to user input to evaluate whether the proposed program actually addresses the requirement, or whether the requirement is unmet and the reason it is unmet (e.g., technologically feasible but cost prohibitive). This tracking will allow NOAA to provide feedback to users regarding how their requirement will be filled or, if it will not, why not. Line offices could develop sublevel KRDs that link to the larger NOAA KRDs.

3. Mission Needs Statement

Once a decision has been made to act on a requirement or set of requirements, then the sponsoring office or team will generate a Mission Needs Statement (MNS) or concept paper. The purpose of the MNS is to describe the requirement against the backdrop of the capabilities, priorities, and resources (either in-hand or proposed for the budget process). The proposed activity designed to meet the requirement would contain some cost analysis to assist decision making. The description in the MNS needs to make a business case supporting why a particular requirement should be addressed and the proposed solution or possible range of solutions. To ensure that the proposal is "end-to-end," sponsoring teams need to demonstrate that they have addresses the NOAA 12-Point Functional Areas described in Table 1. Development of the MNS using these Functional Areas ensures that, from the very inception of the process, sponsors are aware of the need to address and fully develop an analysis of the impact on the user and supporting programs. Within the MNS, the requirement(s) being addressed should be clearly stated to facilitate tracking.

The MNS should describe:

- Mission charter of the requirement(s) or program2
- Purpose2
- Capability2
- Line office or Agency components involved2
- Cost objectives2
- Operating constraints2
- Shortcoming of the existing system or program2

4. Operational Requirements Document

An approved MNS will be used to develop an Operational Requirements Document (ORD) using the 12-Point NOAA Functional Areas as a template to detail the technical requirements for the proposed solution (i.e., program or acquisition). The ORD examines various alternatives and performs the necessary trade-off analyses to develop the preferred option to fulfill the validated requirement(s). At this stage, it will be important to be ensure that the preferred solution will still satisfy the requirements when cost, schedule, performance and, where appropriate, risk are considered.

In the event the requirement cannot be met, the sponsor needs to trace the requirement to the origin and provide reasonable explanations why it cannot be met, or determine if modified requirements will satisfy the users need. In developing the ORD and assessing the various alternatives, the sponsor needs to:

- Develop and prioritize the operational requirements2
- Develop performance measures (or Key Performance Parameters) that the proposed pro-2 gram or system must meet2
- Perform a risk and feasibility analysis2
- Perform cost-benefit, trade-off, and affordability analyses2
- Perform maintenance and logistics support requirements analysis2
- Perform life-cycle cost analysis2
- Schedule objectives (Key Decision Points) in the process2

- Identify other line office or agency involvement and impacts
- Identify external or other agency relationships

Sponsors are expected to examine the various alternatives and make the appropriate selection (preferred solution) which will be reviewed by PA&E prior to review and approval by the Requirements Review Board.

5. Program Analysis and Evaluation

Following the development of the ORD, the MNS will be subjected to a thorough programmatic and technical analysis by the PA&E staff. This analysis would be a new function to the planning process at NOAA and it would be modeled after the Department of Defense protocols, but scaled for NOAA purposes.

a) Scope of Responsibilities

PA&E is envisioned as being a separate review function that will provide an unbiased review and report on various programs, systems, and initiatives during the programming and planning phase. PA&E would provide the Administrator, NEC, and NEP with technical assistance upon which to base decisions.

PA&E would analyze programs and requirements at both the NOAA Level (i.e., complex or matrix-managed projects, systems acquisition, programs with lifetime costs over $10 million, or projects that are politically sensitive) and at the line office level. PA&E would be an independent review and is distinguished from existing functions currently provided by the NOAA Budget Office.

b) Duties

PA&E would:

- Analyze and evaluate plans, programs, and budgets in relation to NOAA's mission, strategic plans, annual plans, cost estimates, and resources.
- 3Review, analyze, and evaluate programs before approval by the NEC (at NOAA Level) or the AA or program manager (at the line office and matrix—managed program level).
- Develop and use analytical tools and methods for analysis of programming and planning of resources.
- Ensure requirements, costs, and resources of NOAA programs are presented accurately and completely
- Evaluate alternatives for programs against NOAA's priorities and missions to determine the most cost-effective solutions.

The PA&E analysis would result in a recommendation to move the proposed activity forward (Yes), to address specific issues (Refine), or that the activity is not appropriate (No).

6. NOAA Requirements Review Board (RRB)

The PA&E review precedes a review of the NOAA Requirements Review Board of the National Executive Panel (Deputy Assistant Administrators and others) at both the MNS and the Operational Requirements document stage. The PA&E recommendation always will precede review by the Board.

The Board will review the documents developed by the sponsor, the PA&E recommendation, and other pertinent information such as NEC priorities, NOAA Strategic Plan and priorities, and appropriations

and pass-back documentation from the Department and OMB to make their decisions whether to approve or disapprove proposed program or requirement.

The proposed criteria that the RRB would use during its deliberation include the following:

1. Under what authority does the proposed program or system acquisition implement NOAA's core mission and current Strategic Themes?
2. Does the proposed program or acquisition bring significant improvements in operational or programmatic efficiencies within NOAA or its customers?
3. Are the affected NOAA line and staff offices in agreement that the proposed program/acquisition should take place?
4. Have impacts or effects on the 12-Point NOAA Functional Areas been addressed?
5. Have performance measures for the proposed program or system acquisition been validated from the Keystone Requirements Database?
6. Have life cycle issues been addressed (i.e., budget, IT, etc.)?

The approval of the MNS by the RRB of the NEP gives the sponsor the ability to move towards a fully developed proposal. In some instances, such as major systems acquisitions or infrastructure, the approval of the RRB is necessary to expend funds for additional planning. Some of these major acquisitions may require consultation with OMB and Congress. Approval of the MNS woud be the appropriate time to initiate these consultations.

It is envisioned that the RRB approval and recommendations will be used to address specific areas of the proposed solution and will be considered by the NEC in their review and final approval for submission into the Programming and Budgeting processes.

7. Role of the NOAA Executive Council

The NEC is the final decision-making body that would review the proposed program or acquisition to address the validated requirements as well as to review and consider the recommendations from the NEP and PA&E. Final approval from the NEC is required prior to submitting a program or acquisition to the programming and budgeting process and the appropriations process, or prior to implementation if funds are available already.

In addition to review of the programmatic and technical aspects of the proposed activity, the NEC would be ranking the various activities to ensure that the highest priority actions are robust and validated for the submission into the President's Budget.

Recommendation on Next Steps

The next step will be to convene a NOAA intra-line office group to finalize and implement the requirements-based process.

Table 1. Description of NOAA's Functional Areas

NOAA Functional Area	Description
1.0 Operations and Services	This documents all aspects of development and delivery of the proposed program/service from inception to data deliver and archive. Include the appropriate wiring diagram. This documents the entire program/acquisition.
2.0 Training (Employee/Operator)	This documents training and education needs for NOAA employees and contractors in order to operate and/or deploy the system.
3.0 Maintenance, Logistics and Facilities	This documents the facilities needs (new or existing), including internal work spaces, maintenance needs and anticipated schedule, and logistics. If this activity requires a separate facilities plan (i.e., construction or lease of a new building), detail the effect of that plan on this program/acquisition.
4.0 Strategic Planning	This documents strategic outlook for the system (end to end) and details key issues such as technology refresh, funds and changes in budget categories (i.e., PAC to ORF, etc.), changing customer needs, etc. Necessary socio—economic analyses should be documented here. Time horizons out to 10 years, or longer as appropriate.
5.0 Safety Planning	This documents all critical safety plans and procedures (i.e., OSHA, EPA, etc.).
6.0 Information Technology/Management	This documents IT systems needs, architecture, technology refresh plan, interoperability with existing systems (within NOAA or with customer) and dissemination of products and services to the customers/users. Need to document and explain what additional burdens are being placed on customers. Need to document data archive strategies.
7.0 Financial Management	This documents the full lifecycle of the program/acquisition (i.e., PAC to ORF) and should reflect matching or in—kind resources from partner agencies. Document that necessary reimbursable agreements or interagency MOU's are in place. Need to document contributions or support for across NOAA Line Offices (fiscal or in-kind). Note that at the Mission Needs Statement level, a "costing" versus "full budget" would be acceptable.

NOAA Functional Area	Description
8.0 Science and Technology	This documents the necessary R&D and S&T needed to support to the full development and implementation of the project. Need to document where support is coming from (i.e., NOAA labs, external science community, other USG agency) and costs. If this program is funding R&D/S&T needs, need to state who and how much. If not, document relative value of science being leveraged to support this program/acquisition. As appropriate, document any recommendations from noted science entities (i.e., National Academy of Science, academia) or noted policy organizations (Pew, Oceans Commission, etc.) or NOAA Science Advisory Board relative to this project/acquisition).
9.0 Staffing and Organization	This documents the full staffing needs of the project (Federal and contractor). If necessary, utilize wiring diagram to demonstrate the matrix staff or organizational contributions to undertake program/acquisition. Identify Project Managers and key authorizing officials. If staff or contractors are to be detailed (either to NOAA or out of NOAA) indicate how many or where. If staff from another agency or entity will be detailed to NOAA facilities, indicate how many and where.
10.0 External Affairs/Outreach	This documents the strategy/plan regarding the development and implementation of a Congressional, media and constituent education and outreach program regarding the program/acquisition to multiple audiences. Identify key stakeholders and means of communicating necessary information to them. Anticipated that the program/acquisition education plan will have been reviewed by the NOAA Education Committee.
11.0 Internal/External Partners	This documents the identify and explain the roles and contributions of external partners who are critical to the development and implementation of this program/acquisition. If this program/acquisition is being developed by a single NOAA Line Office, document which other NOAA Line Offices are partners in this process. If resources are being matched or transferred, provide details. Identify if these partners were involved in the development of the "Requirements Process" upon which this program/acquisition. Identify if an Interagency Agreement or MOU is in place or required.
12.0 Users and Customers	This documents the primary, secondary and where applicable the tertiary customers who will benefit from the products/services being delivered. Cross-walk with 6.0 (Information Technology/Management) and 8.0 (Science and Technology) to document how products/services will be delivered and interoperability issues with user/customer, as well as the strategy to ensure continuous review and evaluation of products/services to reflect the changing R&D and S&T and how it can be incorporated into developing a better product for the customer/user.

Background Materials

1.3NOAA Administrative Order 208-3, Major Systems Acquisition, issued 10/4/94, amended 9/27/96

2.3DOC Administrative Order 208-3, Major Systems Acquisition Office of Management and Budget (OMB) Circular A-109, Major Systems Acquisition

3. Department of Defense Instruction 5000.2

4. Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3170.01B, 15 April 2001

5.3United States Coast Guard internal document, Chapter 3, Requirements Management Process

6. NWS Research and Development Needs and Priorities (internal NOAA document)

7. NWS Requirements Generation Process (internal NOAA document, draft version)

8. NASA Procedures and Guidelines, NPG 7120.5A, April 3, 1998–April 3, 2003

9. Dept of Justice, Systems Development Life Cycle Guidance

10.3DOD Model Applied to NPOESS, Powerpoint slides for Briefing to NOAA Program Review Team, February 15, 2002

11. Federal Aviation Administration Acquisition Management System (rev 01/2002)

12. "Introduction to Defense Acquisition Management" at *www.dav.mil/pubs/gdbks/idam.asp*

13. "Content Requirements for Blue Book Proposals" at *www.onr.navy.mil*

14. NOAA Systems Acquisition Office web site at *www.sao.noaa.gov*

15.3Satellite Observation Requirements Process—Slide Presentation for VADM Lautenbacher, NOAA/NESDIS, February 25, 2002

Attachment 2, Appendix 2-8
Briefing: Requirements Based Management Process

Attachment 2 (Appendix 2-8)

NOAA
PROGRAM REVIEW TEAM

NOAA Requirements Based Management Process Briefing

Presented by: Michele Bullock, Mark Paese, Janice Sessing

April 18, 2002

Purpose

- Gain approval of proposed recommendations for requirements process

Outline

- Requirements Process – Current
- Requirements Process – Proposed
- Requirements Based Management Process Flow
- Requirements Based Management Process
- How Will This Work – Examples
  - Fisheries Survey Vessel (FSV)
  - Coastal Storms
- Proposed Approval Levels
- Proposed Recommendations

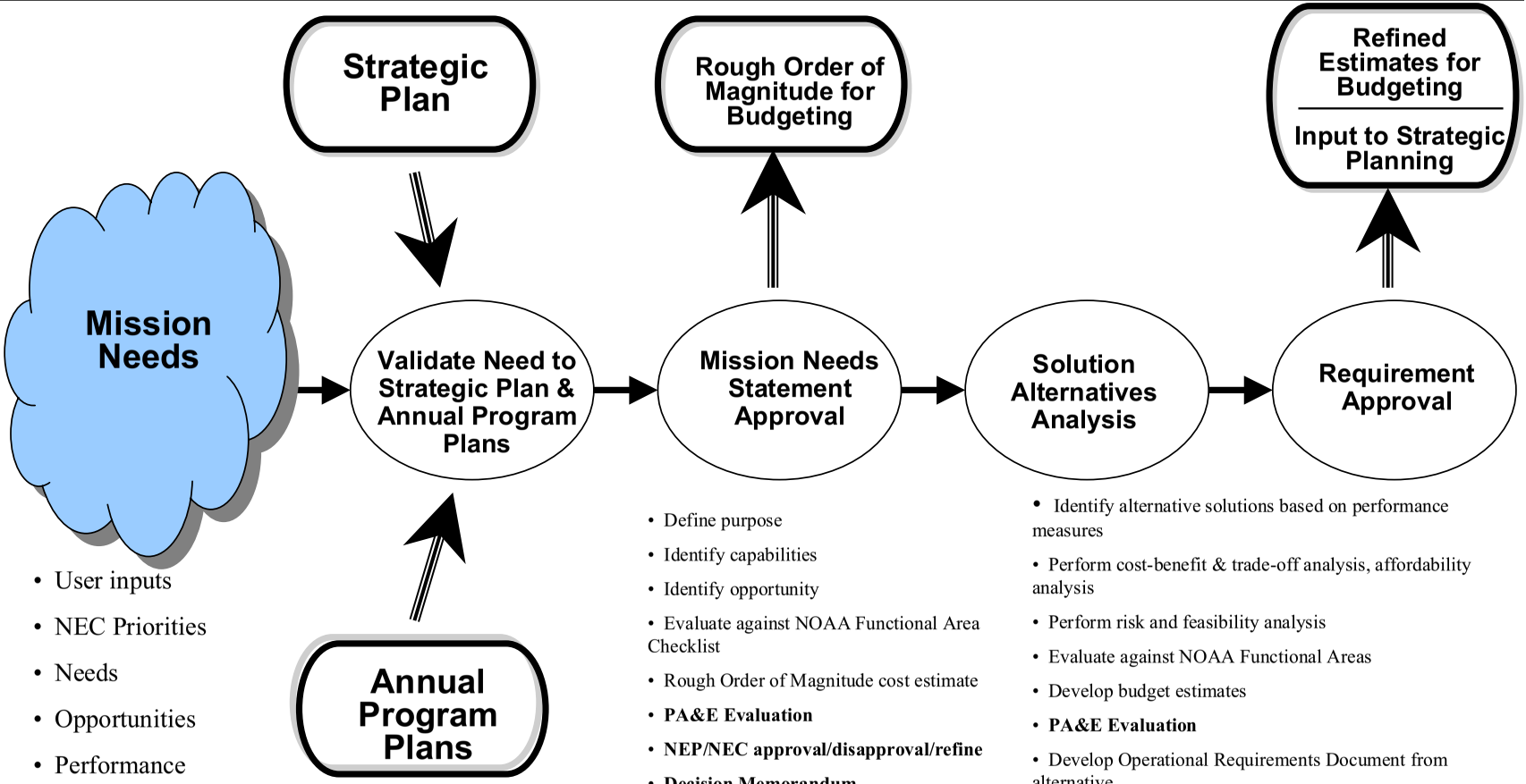
NOAA Requirements Process - Current

- NOAA currently has existing requirements process - NOAA Administrative Order (NAO 208-3) primarily for major systems (typically $100M)
  - References the role of the former Systems Acquisition Office (SAO)
- Requires updating
- NAO 208-3 does not apply well to non-system programs

NOAA Requirements Based Mgmt. Process - Proposed

- Update NAO 208-3 to apply to all NOAA programs and systems
  - Establish individual Line Office/Staff Office requirements based management process and Web based GUI/database - ($10M and below)
    - » Line Office/Staff Office approval
  - Establish NOAA level requirements based management process and Web based GUI/database - ($10M and above)
    - » NOAA Executive Council (NEC) approval
  - Establish interface to Planning, Programming and Budgeting processes

Requirements Based Management Process Flow



Requirements Based Management Process

- Requirements based management process would be on-going (year round)
  - Approval (DAA/AA) meetings at the LO/SO level would be held quarterly (or as required)
  - All requirements will be tracked in a NOAA database – available for all to view
  - NEP/NEC level approval meetings will be chaired by rotating DAA (held as required)
    - » Approved requirements would apply to FY05 planning and budget process – based on NEC directives
  - Implement NOAA-wide requirements process over 2-year period
  - Include Congressionally appropriated programs for out-year budgets
- Approved mission needs statement will identify opportunities and capabilities
  - PA&E evaluation prior to approval
  - Mission needs statement Rough Order of Magnitude (ROM) estimates provided to Budgeting Process
- Solution alternatives evaluation will result in approved operational requirements document
  - PA&E evaluation prior to approval
  - Refined budgetary estimates will be provided to Budgeting Process
  - Approved Requirements will be provided to Planning and Programming Process

How Will This Work (FSV Example)

• Mission Need: conduct dedicated research in Stellar sea lion to identify the cause of their steep population decline since the 1970's.

• Research and observational requirements:

- sea lion population counts
- water collection
  - ➢chlorophyll data collection
  - ➢ocean temperature profiles surface to x depth
- fish counts (food source for sea lion and food source for fish)
- air observations (temperature, wave height, etc)
- all observations 10 days per month - January thru December

• Identify Capabilities:
- land observations
- aircraft observations
- satellite observations
- historical data research
- ship observations – in-house resources not adequate

• Identify Opportunities:
- Congressionally mandated
- Species declared endangered in 1997 and continues to decline

• Evaluate against NOAA Functional Area Checklist:

- Operations & services; training; maintenance,logistics & facilities; strategic plan; safety planning; IT & mgt.; science and tech; financial mgt.; staffing org.; int./ext. affairs; external partners; users & customers

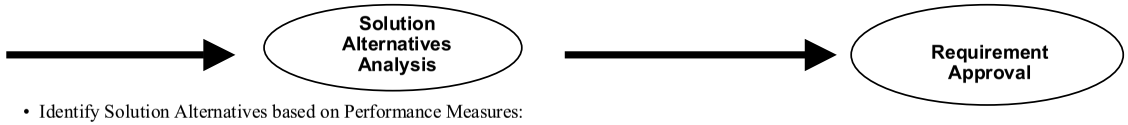
• ROM:
- FY04 = 1.0M - design study
- FY05 = 60M - build ship over 1.5 yrs
- FY06
- FY07 = 1M – O&M annual costs

• **PA&E Evaluation**

• **NEP/NEC Approval**

• **Decision Memorandum**

How Will This Work (FSV Example) cont.



- Identify Solution Alternatives based on Performance Measures:
  - transit range & speed (12,000 nm at 12 kts) - from home port to operating area
  - noise characteristic of vessel - lots of noise, scares food source
  - maneuverability - ability to maintain station, stopping distance
  - ice endurance and all weather capability year-round
  - size of the vessel - number of personnel, labs, equipment, stability
  - multi-mission capabilities - oceanographic, biological, geological, chemical, atmospheric, hydrographic data collection
- Cost Benefit & trade-off analysis, affordability analysis (+/-'s):
  - bigger engines produce more noise, but faster speed
  - multi-mission produces larger vessel, less space for fishing gear
  - larger vessel accommodates more personnel and equipment, but could be less maneuverable and not access all areas
  - contract svcs out (e.g. UNOLS, foreign charters, USCG) - could be more expensive, ship not as capable
- Risk and feasibility analysis:
  - loss of species if study not completed thoroughly
  - Congress and public concerns
- NOAA Functional Areas:
  - Operations & services; training; maintenance,logistics & facilities; strategic plan; safety planning; IT & mgt.; science and tech; financial mgt.; staffing org.; int./ext. affairs; external partners; users & customers
- Budget Estimates:
  - For each alternative develop new cost estimates
    - UNOLS; USCG; foreign vessel charters (e.g. Canada); fishing boats; cost of new ship
- **PA&E Evaluation**
- Operational Requirements Document:
  - Developed from most cost-effective alternative
- **Gain NEP/NEC approval of selected solution**
- **Decision Memorandum**

How Will This Work (Coastal Storms Example)

Mission Needs Statement Approval

- Mission Need: Reduce adverse impacts of storms on life and property, the economy, and the environmental health of communities and resources in our Nation's coastal areas

- Identify Capabilities:
  - NWS – forecasting infrastructure, data products, expanding marine and coastal observations; deployment of buoys, installation of coastal observing platforms
  - NOS – in-house bathymetric/hydrodynamic modeling; decision support tool for risk and vulnerability and education and outreach to state and local officials
  - NFMS – linking coastal storms impacts on natural systems
  - OAR and NESDIS – integrating existing data and develop and implement standards and protocols for data stowage, access & value added products
- Identify Opportunities:
  - coastal regions related disasters lose between $7-36B per year
  - save lives, property and economic impact
  - reduce average cost of storm-related disaster by 10% ($50M), save commercial costs by providing better ship routing
- Evaluate against NOAA Functional Area Checklist:
  - operations & services; training; strategic plan; IT & mgt; science and tech.; financial mgt.; staffing org.; ext affairs; int./ext. partners; users & customers
- ROM:
  - FY04 = 10.755M
  - FY05 = 16.381M
  - FY06 = 18.566M
  - FY07 = 19.903M
  - FY08 = 18.759M
- **PA&E Evaluation**
- **NEP/NEC Approval**
- **Decision Memorandum**

How Will This Work
(Coastal Storms Example) cont.

- Identify Solution Alternatives based on Performance Measures
  - Percentage of shoreline/near shore inland areas to identify severity of coastal storms
  - Number of communities with coastal decision support tools
  - Number of activities conducted to provide training to inform citizenry
  - Cumulative wind & wave forecast accuracy
  - Cumulative warning accuracy
  - Cumulative marine visibility forecast accuracy
  - Cumulative water level forecast
  - Estuarine water level forecast
  - Percentage of national water level observation network stations operational
- Cost Benefit & trade-off analysis, affordability analysis (+/-'s):
  - Number of offshore buoys; number of coastal observation platforms (C-MAN); number of coastal profilers; number of Buoy-mounted profilers; number of water level gauges; amount of modeling resources/expertise; amount of data management & processing; forecast & mitigate habitat degradation from severe storms; aquaculture monitoring decision support tools
- Risk and feasibility analysis:
  - Higher loss of property and lives at risk
  - Commercial ship routing inefficiencies costing money
  - Reduce flooding losses
- NOAA Functional Areas:
  - Operations & services; training; maintenance,logistics & facilities; strategic plan; safety planning; IT & mgt.; science and tech; financial mgt.; staffing org.; int./ext. affairs; external partners; users & customers Budget Estimates
  - For each alternative develop new cost estimates
- **PA&E Evaluation**
- Operational Requirements Document
  - Developed from most cost-effective alternative
- **Gain NEP/NEC approval of selected solution**
- **Decision Memorandum**

Proposed Approval Levels

- Categories are determined by the total (life-cycle) cost of the system/program
- Approval levels are as follows:

NEC Approval
- **Level 1** - Very large system/program with estimated life cycle costs of greater than $100 million
- **Level 2** - Large system/program with estimated life cycle costs of between $10 million and $100 million

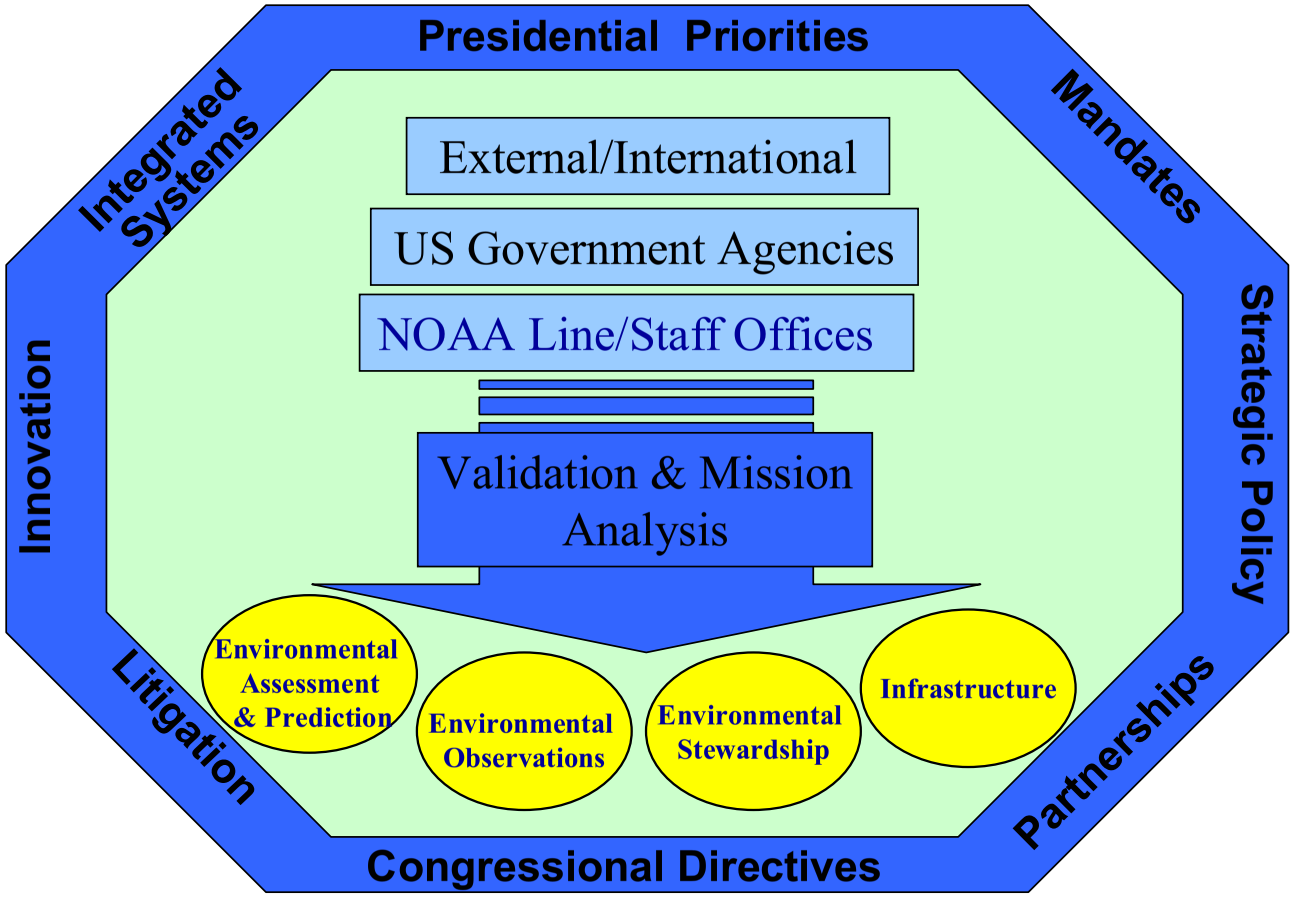
LO/SO Approval
- **Level 3** - Mid-size system/program with estimated life cycle costs of between $2.5 million and $10 million
- **Level 4** - System/program with estimated life cycle costs of between $500,000 and $2.5 million

Proposed Recommendation

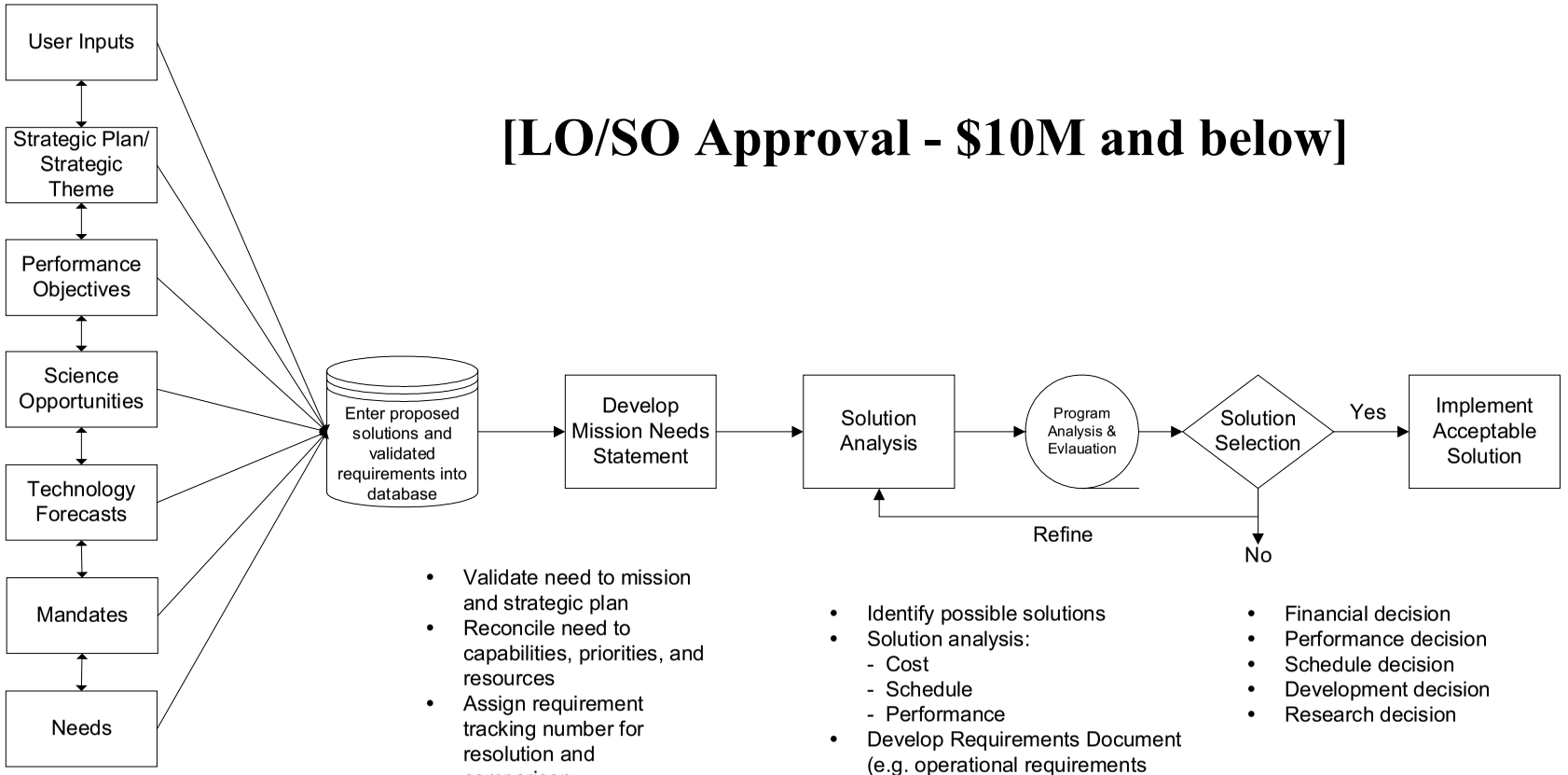
- The PRT recommends that a NOAA-wide requirements based management process be established
- Coordinate requirements based management process development with planning, programming and budgeting processes
- The PRT further recommends a cross-agency working group be established chartered with developing a NOAA Administrative Order (NAO) using inputs developed from the NOAA Program Review
  - Current NAO 208-3 provides a basis for system based requirements
  - Develop NOAA requirements database (web-based GUI) for capturing and tracking NOAA-wide requirements
  - Completion of draft NAO - 90 days from receipt of tasking

Back-up Slides

NOAA Requirements Formulation Continuum

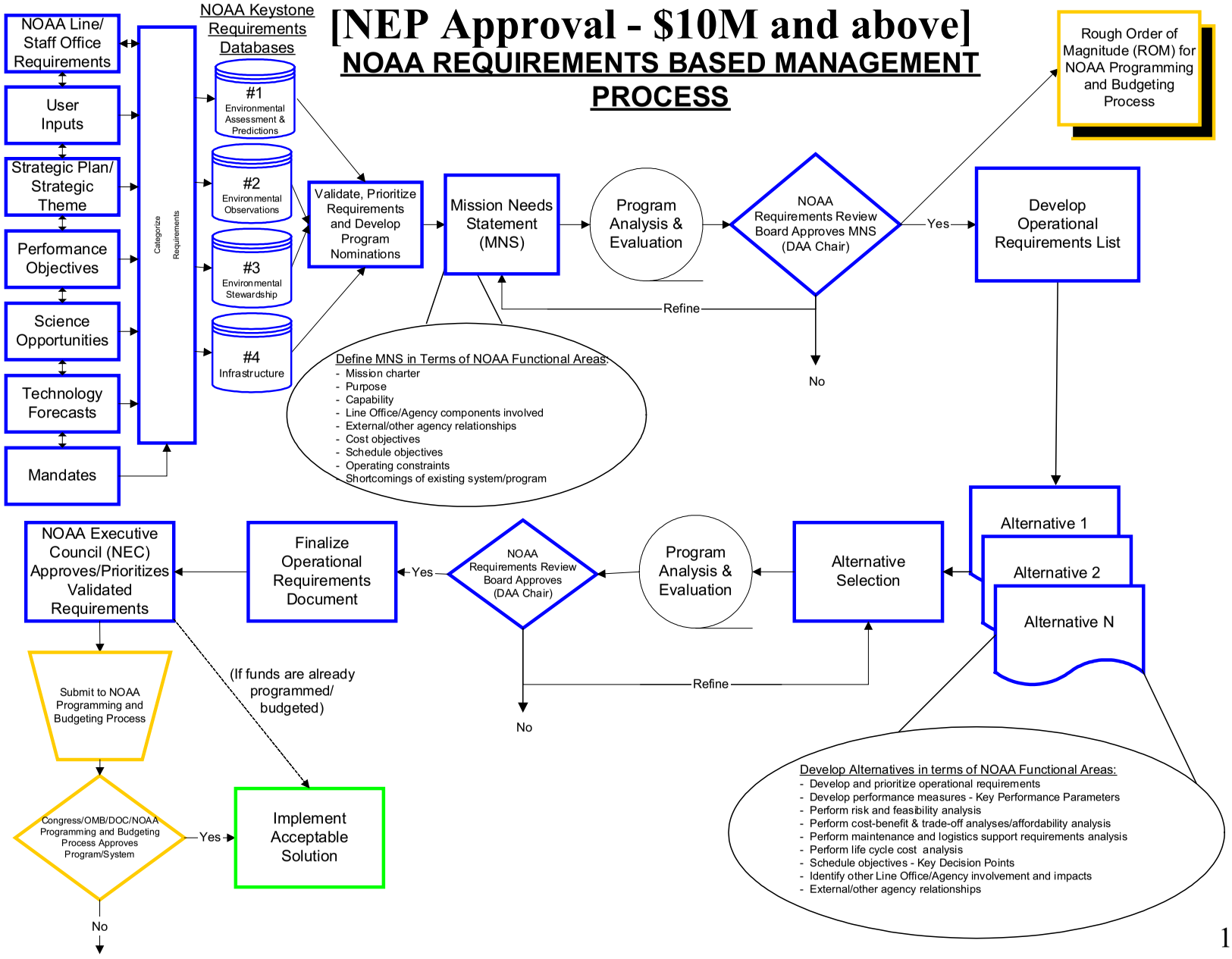


Proposed Line Office/Staff Office Requirements Based Management Process



[NEP Approval - $10M and above]

NOAA REQUIREMENTS BASED MANAGEMENT PROCESS



Proposed PA&E Functions

- Analyze and evaluate plans, programs, and budgets in relation to NOAA mission, strategic plans, annual plans, cost estimates, and resources
- Review, analyze, and evaluate programs for executing approval
- Develop and use analytical tools and methods for analysis of programming and planning of resources
- Ensure requirements, costs, and resources of NOAA programs are presented accurately and completely
- Evaluate alternatives of programs against NOAA mission to determine most cost effective solutions

Proposed Keystone Requirements Database

- Keystone Requirements Database define overall NOAA requirements from various sources for the following:
  - Environmental Assessment and Predictions
  - Environmental Observations
  - Environmental Stewardship
  - Infrastructure
- Keystone Requirements Database form the basis for new systems/programs

Proposed Mission Needs Statement

- Using/incorporating NOAA Functional Areas and a standard template, develop Mission Needs Statement addressing:
  - Mission charter
  - Purpose
  - Capability
  - Line Office/Agency components involved
  - Cost objectives
  - Schedule objectives
  - Operating constraints
  - Shortcomings of existing system/program
  - External/other agency relationships

Proposed NOAA Functional Area Checklist

- ✓ Operations and Services
- ✓ Training
- ✓ Maintenance, Logistics and Facilities
- ✓ Strategic Planning
- ✓ Safety Planning
- ✓ Information Technology/Management
- ✓ Financial Management
- ✓ Science and Technology
- ✓ Staffing and Organization
- ✓ External Affairs, Education & Outreach
- ✓ External Partners
- ✓ Users and Customers

NOAA Requirements Review Board "Tests"

- Test criteria for consideration:
  - Under what authority does the proposed program/system/acquisition implement NOAA's core mission and current Strategic Themes?
  - Does the proposed program/acquisition bring significant improvements in operational/programmatic efficiencies within NOAA and/or its customers?
  - Are the affected NOAA Line/Staff Offices in agreement that the proposed program/acquisition should take place?
  - Have impacts/affects on "NOAA Functional Areas" been addressed?
  - Have performance measures for the proposed program/system/acquisition been validated from Keystone Requirements Database?
  - Have life-cycle issues (e.g. budget) been addressed?

Proposed Operational Requirements Document

- Using/incorporating NOAA Functional Areas and a standard template, develop Operational Requirements Document addressing:
  - Develop and prioritize operational requirements
  - Develop performance measures - Key Performance Parameters
  - Perform risk and feasibility analysis
  - Perform cost-benefit & trade-off analyses/affordability analysis
  - Perform maintenance and logistics support requirements analysis
  - Perform life cycle cost analysis
  - Schedule objectives - Key Decision Points
  - Identify other Line Office/Agency involvement and impacts
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NOAA Functional Area Definitions

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NOAA Functional Area Definitions (cont.)

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- **10.0 External Affairs/Outreach.** This documents the strategy/plan regarding the development and implementation of a Congressional, media and constituent education and outreach program regarding the program/acquisition to multiple audiences. Identify key stakeholders and means of communicating necessary information to them. Anticipated that the program/acquisition education plan will have been reviewed by the NOAA Education Committee.
- **11.0 Internal/External Partners.** This documents the identify and explain the roles and contributions of external partners who are critical to the development and implementation of this program/acquisition. If this program/acquisition is being developed by a single NOAA Line Office, document which other NOAA Line Offices are partners in this process. If resources are being matched or transferred, provide details. Identify if these partners were involved in the development of the "Requirements Process" upon which this program/acquisition. Identify if an Interagency Agreement or MOU is in place or required.
- **12.0 Users and Customers.** This documents the primary, secondary and where applicable the tertiary customers who will benefit from the products/services being delivered. Cross-walk with 6.0 (Information Technology/Management) and 8.0 (Science and Technology) to document how products/services will be delivered and interoperability issues with user/customer, as well as the strategy to ensure continuous review and evaluation of products/services to reflect the changing R&D and S&T and how it can be incorporated into developing a better product for the customer/user.

Proposed Requirements Based Management Process Pros/Cons

- **Pros:**
  - Establishes a policy and procedures for all NOAA requirements
  - Establishes interfaces with other "processes" for integrated NOAA solutions
    - Establish NOAA Executive Council Panel for approval authorities
  - Provides a formal process to validate needs and establish requirements
  - Provides a formal process for cross-cut/intra-agency coordination
  - Allows NOAA resource decisions to be based on solid performance measures and requirements
  - Establishes a "checks and balances" with the proposed Program Analysis and Evaluation (PA&E) function
  - Ties Strategic Planning, PA&E, Program Coordination, and Organization/Decision Support to a "one-stop-shopping" organization
- **Cons:**
  - Cultural change within NOAA
  - Requires Line Offices/Staff Offices to establish formal requirements based management processes
  - Line Office/Staff Office control may be reduced

NOAA Administrative Order (NAO) 208-3

(Requirements Process - dated 9/27/96)